

## Claims

1. A method of producing a porous solid,  
characterized by the steps of:
- 5       (i) preparing a fluid mixture comprising a first  
phase which includes one or more inorganic  
ionic components, and at least one second  
phase, the first phase and the second phase  
being essentially immiscible in the solid  
10      state,
- 15      (ii) cooling the fluid mixture to a temperature  
below the solidification point in order to  
form a solid phase mixture comprising at  
least one first crystalline phase and a  
second phase, and
- 20      (iii) removing the second phase.
2. The method as claimed in claim 1,  
characterized in that  
25      the cooling is performed under non-segregating  
conditions.
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3. The method as claimed in any one of claims 1 or 2,  
characterized in that  
25      the fluid mixture has an essentially eutectic  
composition.
4. The method as claimed in any one of claims 1 to 3,  
characterized in that  
30      the second phase is removed in step (iii) by means  
of solvent extraction.
- 35      5. The method as claimed in any one of claims 1 to 4,  
characterized in that  
          the second phase is a substance which is soluble  
          in aqueous media.

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Cont.

6. The method as claimed in any one of the preceding claims,  
characterized in that  
the first phase is a water-insoluble salt.  
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7. The method as claimed in any one of the preceding claims,  
characterized in that  
the second phase is a water-soluble salt which is  
10 able to form a eutectic mixture with the first phase.

8. The method as claimed in any one of the preceding claims,  
15 characterized in that  
the first phase comprises AgCl and the second phase comprises an alkali metal halide.  
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9. The method as claimed in claim 8,  
20 characterized in that  
the mixture is formed from 70 mol% of AgCl and  
30 mol% of KCl.  
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10. Porous ion-conducting solid obtainable via a  
25 method as claimed in any one of claims 1 to 9.  
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11. An electrochemical cell which contains as the electrolytes a porous solid as claimed in claim  
30 10.  
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12. The electrochemical cell as claimed in claim 11,  
characterized in that  
the pores of the solid are filled with a fluid.  
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35 13. The electrochemical cell as claimed in claim 12,  
characterized in that  
the fluid is a liquid electrolyte.  
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*PC Sub 3*

14. The use of a solid or an electrochemical cell as claimed in any one of claims 11 to 13 as a sensor.

15. The use as claimed in claim 14 for the  
5 determination of gases.

16. The use of a solid as claimed in claim 10 in separation technology or in catalysis.